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Resilience and recovery: SME experiences of extreme weather events and other external threats

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Objectives: To examine how small and medium-sized firms deal with external shocks of various kinds, with particular reference to extreme weather events. The research asks how business owners and managers prepare themselves for these inherently uncertain events and how they deal with immediate impact on the business when it faced with an external crisis. It also explores the longer term effects of exposure to adverse conditions, to see whether these experiences tend to undermine businesses, or help to make them more resilient over time.

Prior Work: The research is informed by contributions to the resilience literature, which spans individual, organisational, inter-organisational and regional levels of analysis. It identifies a variety of factors as potential sources of resilience for smaller firms and potential vulnerabilities. Some empirical work has been conducted in this area but there is scope for a more in-depth examination of the ways that SME owners and managers perceive and prepare for external threats, their experiences in responding to crises, and implications of the promotion of environmentally sustainable practices.

Approach: Evidence was collected from a large quarterly survey of SMEs in Britain. Statistical findings are based on 1,353 useable questionnaire responses comprising a sub-sample drawn from a larger telephone omnibus survey, supplemented by a sub-sample of respondents to a slightly longer online version. The statistical data were augmented by qualitative evidence from online respondents and a series of six semi-structured interviews which explored issues emerging from the survey in greater detail.

Results: Organisational resilience is an important issue for SMEs. Nearly three quarters (73%) of respondents identified at least one external event that posed a 'real threat' to their business over the last five years and many identified multiple threats. Extreme weather conditions were identified as a real threat by 27% of respondents, a finding underlined by graphic qualitative accounts of damage caused to businesses by events such as flooding and heavy snowfall (n.b. the survey was conducted prior to the extended period of storms and flooding that disrupted many businesses in late 2013).

Value: This working paper makes an empirical contribution to the organisational resilience literature by providing evidence from a relatively large and broadly representative sample of British SMEs, coupled with tentative policy implications and suggestions for further research. Recent years have seen a policy focus on promoting high growth firms. Given continuing economic uncertainties and the prospect of increasing threats from extreme weather events, it may also be advisable to consider initiatives that foster the longer-term resilience of SMEs, and to pay particular attention to the needs of smaller and more vulnerable firms.

INTRODUCTION

We are now more than five years on from the start of the global financial crisis. This period has also seen a number of other external disruptions, including several severe weather events (e.g. drought, storms and flooding), the August 2011 riots in London and some regional cities, and more localised emergencies, such as thefts and arson attacks on business premises. As many businesses begin to report signs of an upturn, it is timely to examine how resilient SMEs have been in the face of these events, how they have prepared and responded to them, and whether the experience of dealing with a severe disruption of this kind has increased their capacity to respond to similar events in the future. These issues have been examined through our main telephone survey and by drawing on the additional qualitative evidence obtained from respondents to a parallel online survey¹. In evaluating the responses, it is important to note that this is a survey of 'survivors' (i.e. SMEs that were still actively trading at the time of the survey). This means that our data on questions about external events experienced over the last five years, for example, does not include responses from businesses that failed in this period².

There is a growing academic literature on organisational and regional resilience, which identifies a variety of factors as potential sources of resilience for smaller firms as well as some potential vulnerabilities (e.g. Smallbone, Deakins, Battisti and Kitching (2012) Herbane (2010); Chrisman, Chua and Steier (2011)). Resilience is thought to arise due to the tendency of some smaller firms to exhibit greater flexibility in the face of changing situations and to have fewer formalised procedures. By contrast, smaller firms are thought to be more vulnerable to external shocks as a result of factors such as the relatively limited resources and inability to spread the risks across multiple products or markets. As a consequence, businesses can be undermined by unexpected events such as a disruption in the flow of materials from a key supplier (e.g. due to an extreme weather event) or as a result of the sudden failure of a major customer. In this working paper, we review the full range of external threats identified by the respondents, but with a particular focus on extreme weather. Our decision to focus on extreme weather is based on the survey findings, which signal the importance that SME owners and managers attached to this specific type of event. It also provides an opportunity to scrutinise the distinct yet related concepts of resilience and sustainability. Our longer term aim is to explore this theme with particular reference to the relationship between extreme weather events, managerial perceptions of climate change and efforts to improve the environmental performance of SMEs.

The paper is structured as follows. First, we set out the research methods adopted for the main survey and point out relevant characteristics of the sample firms. The findings section outlines the types of external event that have posed a 'real threat' to SMEs, their impact on businesses, and how firms have adapted in order to become more resilient. We also report some tentative findings on the relationship with other strategic priorities. The concluding discussion reflects on these findings and draws out potential areas for future research.

RESEARCH METHODS

The findings presented in this working paper are drawn from research conducted for the *Quarterly Survey of Small Business in Britain*. The firms that respond to the survey are drawn from a large telephone omnibus survey (the BDRC Business Opinion Omnibus) based on a structured sample of small and medium-sized firms and a parallel online survey managed by The Open University. The aim of the sampling strategy is to provide a fair representation of the SME population while also enabling the research team to explore the inherent complexity and richness of business life today. It should be noted

¹ This working paper presents initial findings, which will be developed by the authors with reference to relevant literatures. We also intend to draw on the finding of six related case studies, conducted by one of the co-authors, which explore the issues in more depth as they affect particular businesses.

² While data on firm closures is available, it remains difficult to estimate small business 'failure' rates for many reasons (e.g. the difficulty in distinguishing voluntary closures from business failures, a lack of evidence for smaller unincorporated business and the phenomenon of so-called 'zombie firms').

that the survey sample is not a panel, nor is it fully random. The online survey continuously recruits new members to reflect the national distribution of small firms but also seeks to retain respondents over the longer term in order to support the more in-depth questions and case studies, and to provide insights into the changing experiences of SME owners and managers over a more extended period. The online survey was conducted during October and November 2013, generating 475 valid usable responses. A total of 878 telephone interviews were carried out in two monthly waves. In the first wave, a total of 440 telephone interviews were conducted between the 7th and 17th October 2013. In the second wave, a further 438 telephone interviews were conducted between the 4th and 14th November 2013. This generated an overall total of 1,353 responses. The online survey was conducted using *Qualtrics* survey software. The two sets of survey data were combined, checked and analysed using the *SPSS* statistical package.

There are some differences in the composition of the two sub-samples. For example, the telephone survey does not include firms with a turnover below £50,000 and few of the online survey respondents have more than 50 employees. The telephone survey sample includes more firms established since 2006, compared to that obtained from our regular online respondents. There are also some sectoral differences (e.g. there is higher proportion of telephone respondents in the business services and manufacturing sectors, but somewhat lower proportions in health, education, leisure & other and hotels & restaurants). For tables by number of employees, we have adopted the Department for Business Innovation and Skills (BIS) definition of a firm with no employees. This is where a self-employed sole proprietor or partners work on their own with no employees, or where a limited company has a single employee director (n.b. a firm with one sole proprietor and one employee is counted as a one employee firm, but a company with two employees is counted as a two employee firm).

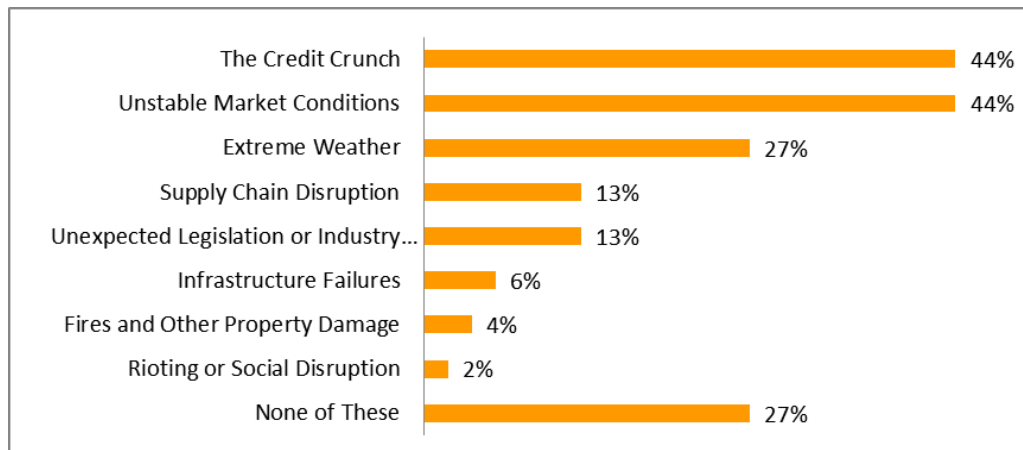
RESEARCH FINDINGS: EXTERNAL THREATS AND RESILIENCE

External events that have posed a ‘real threat’

We asked respondents to look back over the last five years and identify specific types of external event that had posed a ‘real threat’ to their business (Chart 1). Almost three quarters (73%) of businesses identified at least one of these events, a figure that underlines the challenges facing small and medium-sized firms. Almost half of these SME owners and managers (44%) thought that the credit crunch had posed a real threat to their business. The impact of the economic crisis was also reflected in the same proportion (44%) that identified the closely related issue, ‘unstable market conditions’. Perhaps the most surprising finding was that extreme weather conditions posed a real threat to more than a quarter of these businesses (27%)³. This is a particularly interesting result given the continuing debate over public policies for climate change mitigation and adaptation, and the role that SMEs might play in these developments (e.g. Blundel, Monaghan and Thomas. (2012)). In addition, more than one in ten firms felt threatened by supply chain disruptions (13%) and by unexpected changes in legislation (13%). The figure recorded for infrastructure failures (6%) appears relatively low, though this may be due to some respondents combining this category with another (e.g. where extreme weather events such as storms and flooding disrupt electricity supplies). It is also likely that infrastructure-related problems are influenced by location, with businesses in remoter rural areas tending to be more vulnerable to intermittent disruptions and also more likely to have to wait longer for repairs.

³ It is important to note that the question refers to a five-year period. Though there were some storms in parts of the country during the period of the survey, it was conducted prior to the long sequence of storms and flooding that disrupted many businesses over the Christmas and New Year holidays. The qualitative evidence on this topic (analysed below) includes many references to heavy snowfall that occurred earlier in 2013.

Chart 1: 'Looking back over the last five years, which of the following external events has posed a real threat to your business?'



We received a large number of comments from our online respondents in response to the question: 'Please give an example, based on one of the events you have selected, to explain why it posed a threat to your business?' The scale of these threats is difficult to measure in the abstract (e.g. were they relatively short-lived, reducing cashflow or profitability for a few months, or sufficiently severe to put the entire business in danger). However, the following examples illustrate some of the complex ways that they are experienced by SMEs; these accounts also reveal ways in which a sequence or **combination** of unrelated external events can undermine an otherwise healthy business:

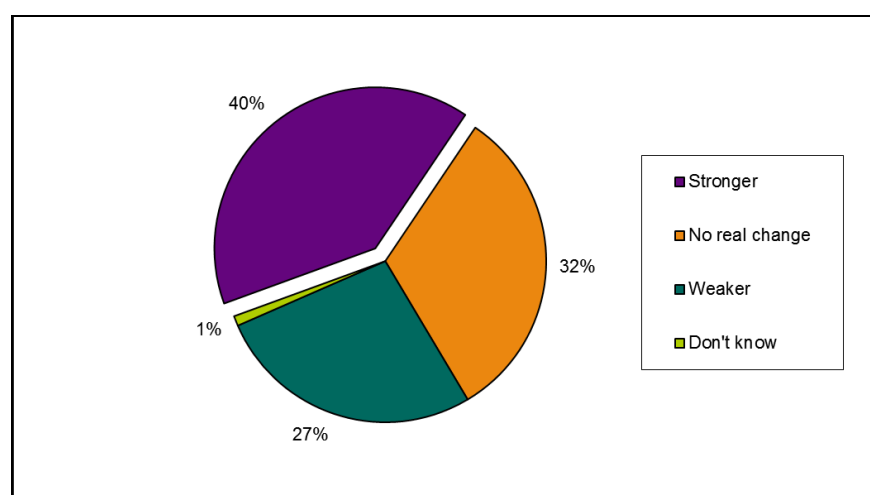
- *'A major fire destroyed our workshops at our main depot resulting in our not being able to carry out MOT and eventually giving up on an important section of the business. Electrical supply failures during the winters are frequent and sometime last for several hours resulting in loss of telephones, heating and equipment not working. Local Authority changes of policy have reduced our work and profitability resulting in down-sizing of staff and vehicles.'*
- *'Bad weather Jan 2013 meant we were unable to get about, if you are unable to visit customers, you are unable to make a sale, as we carry the stock on board our sales display vans, the end result is fewer sales.'*
- *'Heavy snowfall caused road closures preventing workforce attendance and receipt and despatch of food products to customers.'*
- *'Bad snow and a useless council who didn't clear the roads. Just before Christmas – perfect timing!!'*
- *'Local flooding left 100mm of water throughout our warehouse and office and led to severe disruption to the local area for traffic and business.'*
- *'Working in the construction industry as an external trade, severe weather conditions stop work. This is nothing unusual but a sustained bad period of one month of poor temperatures/conditions significantly reduces our turnover for that month and has a knock on effect with cash flow. Unfortunately the overheads of the business remain the same, even when there are these poor conditions.'*
- *'Boiler failure in Dec 2007 led to us cancelling Xmas and New Year programme. Storm damage in July 2013 has caused a huge amount of assets having to be discarded - still waiting for insurance payout. Financial problems since late 2007 continued through the recession. [There is also] pressure from banks to reduce overdraft.'*
- *'During the London riots there was looting within a hundred yards and not sign of any police presence for nearly a week.'*
- *'The riots in 2011 caused a very quiet period and ruined an exhibition we were at. In March this year heavy snowfall completely ruined the show attendance of another exhibition.'*

- *'Power failure: all our data and dispensing is based on a functioning IT infrastructure. Our prescriptions are now increasingly sent directly to us from the GP surgeries through the NHS Net via secure broadband. When power failed twice last week we could not function.'*
- *'One major customer [...] saw his turnover reduced by 80% due to the credit crunch in 2008 and lived off stock until 2012, but is now only giving us modest short-term orders. Another customer believed himself to be recession-proof [but] reduced his business with us by 60% due to his market shrinking.'*
- *'The credit crunch meant that our developer clients could not get funding from lenders to develop new buildings, therefore commissions dried up. At the same time HMG's austerity measures meant that public sector projects were cancelled leading to a sharp fall in business activity.'*
- *'The credit crunch has been appalling for my business. People are making do with old spectacles.'*

Impact on the business of adverse events

We asked respondents whether they thought their business had become stronger or weaker as a result of these experiences. The most common response (40%) was that the business was stronger, but for more than a quarter of respondents (27%), the business had been weakened as a consequence. Almost one third of businesses (32%) thought that there had been no real change (Chart 2). These differences are likely to be attributable in large part to the nature of the events identified in particular cases, including their severity and whether they occurred as isolated incidents or, as discussed in the previous section, in combination.

Chart 2: 'Do you think your business has become stronger or weaker as a result of these experiences?'



We examined the responses according to business size, sector and region, as well as by business age. The strongest overall patterns were size-related, and are discussed in the following paragraph. In the figures for business age, the youngest businesses (0 to 4 years), reported particularly positive impacts of external events, with 60% saying they were stronger as a result, 33% seeing no real change and only 4% seeing themselves becoming weaker as a consequence. While this result may be affected by the relatively small size of the relevant sub-sample (48 firms), it would also be consistent with research suggesting that firms founded in adverse conditions tend to be more resilient than those that begin life in more settled times.

The size-related patterns are quite striking. Only just over one fifth of the smallest businesses with a turnover of less than £100,000 (21.1%) thought they had become stronger, as compared to more than half (51.9%) of firms with a turnover of more than £5 million. In a similar way, twice the proportion of these smallest firms (38.9% of those in the below £100,000 turnover category) thought that external events had weakened their business, as compared to their larger counterparts (16% of those in the £5 million+ turnover category) (Table 1). The apparent greater vulnerability of the very smallest firms echoes a result

that is regularly identified in our survey findings, where smaller businesses tend to suffer the impact of economic downturns more than relatively larger ones.

Table 1: 'Do you think your business has become stronger or weaker as a result of these experiences?' – by turnover band

	Stronger	No real change	Weaker	Don't know
Less than £100,000	21.1%	37.7%	38.9%	2.3%
£100,000-£249,999	34.6%	36.2%	28.5%	0.8%
£250,000-499,999	33.9%	34.7%	29.8%	1.6%
£500,000-£999,999	44.3%	29.5%	24.8%	1.3%
£1m-£5m	47.1%	27.5%	24.3%	1.1%
£5m+	51.9%	29.8%	16.0%	2.3%
All	39.4%	31.9%	27.1%	1.6%

In order to get beneath the surface, we asked our regular respondents to provide practical examples of how their businesses had been either weakened or strengthened as a result of their exposure to particular external events. Though many different issues were raised in the responses, the main themes emerging from the 'strengthened' businesses were around the way that adverse conditions had made the owners and managers re-assess their ways of working, often resulting in strategic changes such as market repositioning and rationalisation. In many cases, there was also a sense that they had learned from the experience and thought themselves better placed to deal with the next crisis:

- *'Forced us to seek new products to sell into existing markets and new markets for existing products.'*
- *'Having been forced to adapt to changes has made us review what we do and how it's done.'*
- *'Having experienced the problems associated with the weather disruption, back up processes have been developed to mitigate the effects of future problems.'*
- *'We have adapted and diversified. We also identified the weaker areas of business and moved away from them. We also moved to shorter working weeks for many staff, reducing overheads and giving more flexibility especially at peak demands.'*
- *'The business was able to demonstrate to customers that it was well positioned in the market and had made suitable provision to ensure that supply shortages did not impact on our ability to meet customer demand. We also learnt some useful lessons regarding risk reduction.'*
- *'We are now more cautious when considering future growth and consider risk in connection with future projects we bid for. We are selective in the markets we trade in.'*
- *'We are stricter with our terms of business and more careful who we give credit. We have no loans other than to our own family who will support us in times of financial crises unlike the banks.'*
- *'It induced us to make changes which have benefitted us in the long term, even though profits fell in the short to medium term.'*

By contrast, for those businesses weakened by the impact of external events, the story was almost entirely about three seemingly intractable issues: loss of customers, reduced income and problems with cashflow. This often results in owners and managers having to adopt short-term (or 'fire-fighting') approaches, and making difficult decisions in order to survive:

- *'Our customer base has shrunk and we see little signs of new investment in manufacturing in Scotland.'*
- *'Our turnover has reduced year on year since 2010. Finance is harder to maintain at economic borrowing rates and terms with a reducing order book even though we are involved in the development stages of major projects with several multinational customers which will go ahead in two / three years' time.'*
- *'Cash flow has become more of an issue with us having to resort to using reserves much more significantly.'*
- *'We no longer have any cash reserves to fall back on. We now rely on cash flow and understanding suppliers to continue trading as there is very little or no profit which would enable cash reserves to be rebuilt.'*
- *'We find ourselves back – almost to where we started – and day-to-day firefighting with the difficulty of having [no] mid-long term strategy. It's all about this week and influenced greatly by what government/press/public opinion says about economic issues.'*

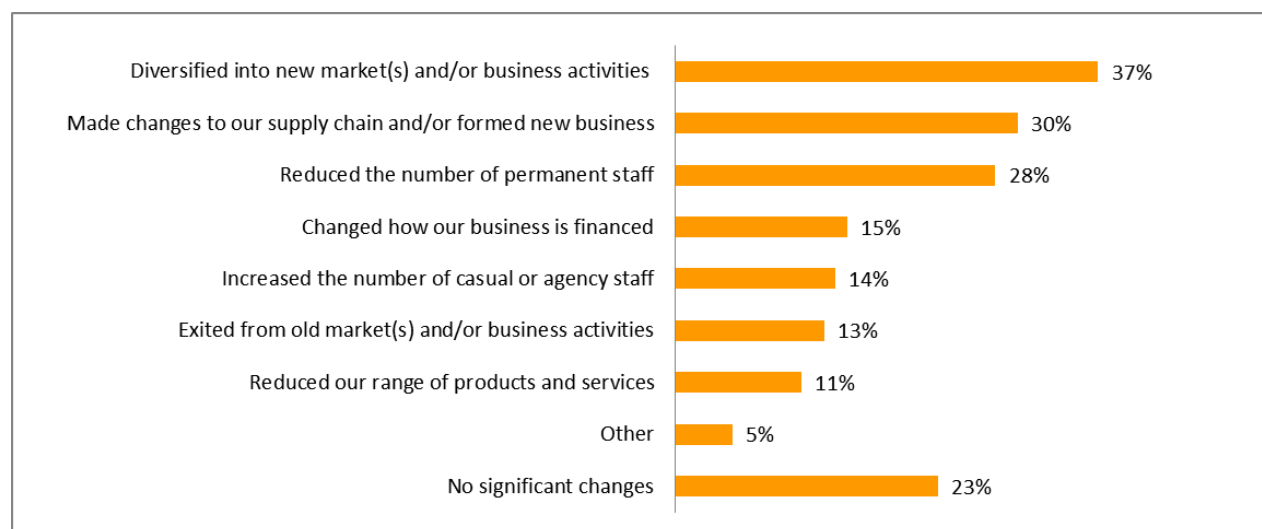
Lastly, it is worth noting that perceptions of 'strength' and 'weakness' are open to interpretation. As the following respondent – a private healthcare provider – points out, a business may become 'leaner' and more able to cope financially, but the resulting cost-savings can have negative consequences in other areas, including quality of service and ethical performance:

'To maintain adequate margins has meant careful management of staff numbers and wages. Some would say not a bad thing, but I would not necessarily agree. Has more pressure on staff potentially reduced patient safety?'

How businesses adapt to become more resilient

We asked respondents how they had adapted their businesses over the last five years to make them more robust or resilient (Chart 3). There were a series of options, based on a review of the relevant research evidence, plus an option to specify other kinds of changes. The most commonly identified change was to diversify into new market(s) and/or business activities (37%). This was closely followed by making changes to the supply chain and/or forming new business partnerships (30%), and reducing the number of permanent staff employed (28%). The four remaining strategies in the list were adopted by a smaller but still notable proportion of businesses: changing how the business is financed (15%); increasing the number of casual or agency staff (14%); exiting from old market(s) and/or business activities (13%); and reducing the range of products or services (11%). However, it is also worth noting that almost a quarter of businesses (23%) say that they have not made any significant changes, a result that perhaps reflects exposure to less severe (or persistent) external events.

Chart 3: 'In what ways have you adapted your business over the last five years to make it more robust or resilient?'



Though this was the overall pattern, we did identify a few striking variations in relation to the 'top three' adaptations. For example, only 22% of the smallest businesses with a turnover of less than £100,000 said they diversified into new market(s) and/or business activities, compared to almost half of those with a turnover of between £1 million and £5 million (44.6%), and a similar proportion of those in the more than £5 million category (44.3%). This strategy was also adopted by more than half of respondents in the Manufacturing sector (52%). By contrast, it was only identified by just over a quarter (28.2%) of respondents in the Hotels and Restaurants sector and a third of those in the Health, Education, Leisure, Other sector (32.9%). The sectors most commonly making changes in their supply chain and/or forming new business partnerships were Wholesaling (37.4%) and Manufacturing (36.3%). Perhaps surprisingly, the sectors reporting the lowest figures for this kind of adaptation were Agriculture, Fisheries and Forestry (22.2%) and Transport, Storage and Communication (22%). The lowest proportion of businesses reducing permanent staff was also in the Agriculture, Fisheries and Forestry sector (14.8%) while the highest was for Hotels and Restaurants (36.9%).

We asked online respondents for some concrete examples of changes they have made to make their business more robust or resilient. The responses were extremely varied, sometimes generic (e.g. *'Changed the way we finance the company.'*), but often very sector specific (e.g. *'[We] invested in new technology cutting edge high speed printers to reduce cost.'*). The following selection from their responses illustrates the diversity, echoing the main strategies identified above, including: diversification, consolidation and cost-reduction (Chart 3):

- *'Reduced [product] choices prevent stock falling out of date but this is done in consultation with our customers and the need to address their requirements. [We] reduced permanent staff [to] give us the flexibility to contract part-time staff only where the need is for extra staff.'*
- *'Simplified menus, using cheaper ingredients in recipes, introduced more flexible pricing and packaged deals, explored new markets [...], increased social media communication, expanded with more bedrooms to grow the business as bedrooms still sell etc.'*
- *'Motorsport was our mainstream business up until 2008 all of which suffered greatly with the sudden arrival of the global financial crisis, the business now operates with no Motorsport involvement and is financially better off by generating more retained profit from similar turnover, this situation has occurred progressively over the last 5 years.'*
- *'Looked to sell products in export markets to cover the downturn in UK, this way we can have payment upfront before shipping, reducing need for credit.'*

- *'Manufacturing in India to achieve competitive prices.'*
- *'More on line selling and dealing directly with manufacturers.'*
- *'[Started using] outsourcing and Crowdsourcing sites for work.'*

Several responses also suggest how some firms have been making strategic investments in stock and fixed assets during the recent economic downturn in order to address problems they have faced due to external events and to remain competitive:

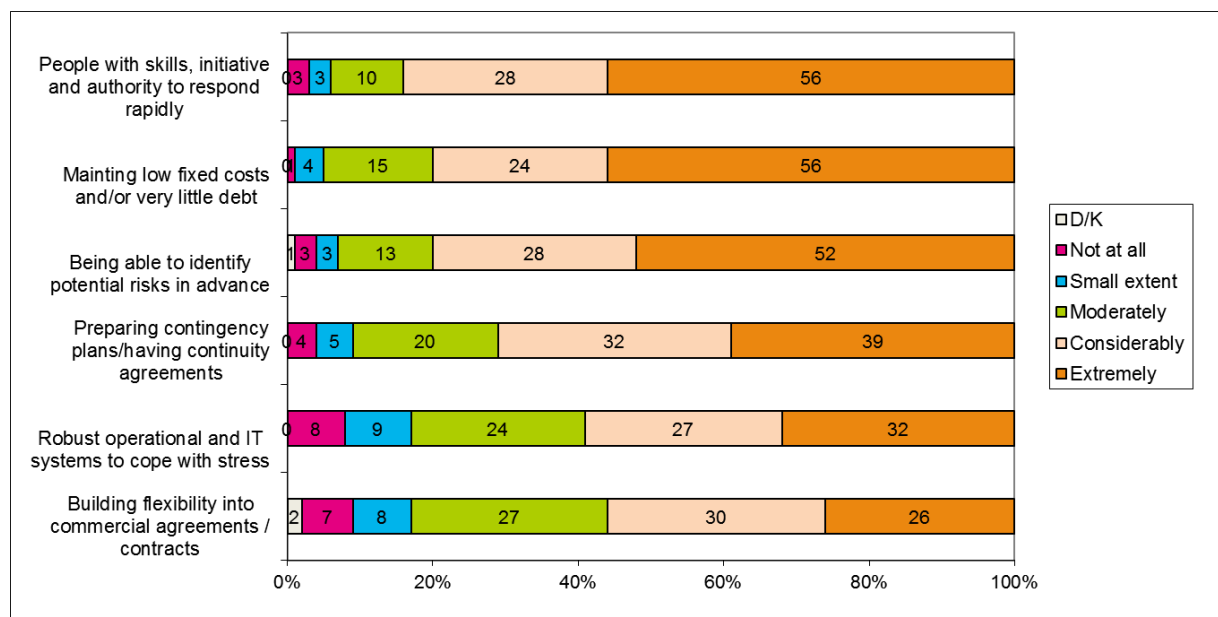
- *'Large investment in stock through a partnership with a global player in our industry.'*
- *'Invested in equipment to produce faster and cheaper. Also purchased equipment to run our tooling so it can sold as "tested and fully functional". This makes customers more likely to purchase "tested tools".'*
- *'Continued investment in the latest technology, stayed ahead of the competition.'*

Most important factors in becoming more resilient

Towards the end of the questionnaire, we asked our respondents to identify how important they found each of the following factors if a business is to survive a serious external event (Chart 4). The factors, listed below, were drawn from a review of the literature and respondents were asked to rate each one (where: 5 is 'extremely important' and 1 is 'not at all important?'):

- Being able to identify potential risks in advance
- Preparing contingency plans and/or having business continuity arrangements in place
- Having robust operational and IT systems in place that can cope with extreme stress
- Having people with the skills, initiative and authority to respond rapidly to unfolding events
- Maintaining relatively low fixed costs and/or very little debt
- Building flexibility into commercial agreements and contracts
- Other (please specify)

Chart 4: 'How important do you consider each of the following factors if a business is to survive a serious external event?' (where: 5 is 'extremely important' and 1 is 'not at all important?')



We conducted some further analysis to identify patterns amongst the most commonly identified factors. The following table shows the breakdown of the category: 'Having people with the skills, initiative and authority to respond rapidly to unfolding events.' (Table 2). This shows how respondents from relatively larger businesses place greater emphasis on this factor, as compared to the smaller businesses in the sample.

Table 2: Importance of the factor 'Having people with the skills, initiative and authority to respond rapidly to unfolding events' if a business is to survive a serious external event? (where: 5 is 'extremely important' and 1 is 'not at all important') – by turnover band

	1 - not at all important	2	3	4	5 - extremely important
Less than £100,000	5.7%	4.5%	14.6%	25.1%	49.0%
£100,000-£249,999	1.8%	3.6%	12.7%	21.8%	59.4%
£250,000-499,999	2.4%	4.2%	7.8%	27.5%	56.9%
£500,000-£999,999	5.2%	3.1%	9.4%	30.2%	51.6%
£1m-£5m	0.8%	1.3%	8.5%	27.8%	61.3%
£5m+	0.0%	1.1%	5.9%	33.5%	59.5%
All	2.5%	2.8%	9.8%	27.7%	56.6%

We also asked online respondents to provide examples from their own experience to illustrate the importance (or otherwise) of particular factors. Again, we received a wide variety of responses, the following quotations indicating the kinds of issues raised. Firstly, in relation to the importance of having the right people in place, with appropriate skills, experience and capacity to exercise their own initiative:

- *'A major component failure in our refrigeration plant could have resulted in the closure of operations in one sector of the business. However, with operator skill and workforce flexibility it was possible [...] to limp along with no loss of revenue until repairs could be effected.'*

Secondly, we have seen many comments about cost-cutting and operating with much lower capital and cashflow requirements. The following quotations puts this kind of approach in context:

- *'Having identified the impending 2008 financial crisis we were able to reduce inventories, cut credit to suspect debtors and reduce our operating costs such that we experienced a significant inflow of cash.'*
- *'Having relatively low fixed costs was significant when faced with having to reduce our new business activity for a period until we managed to replace the previous level of bank funding.'*
- *'[I] always keep an eye on the bank balance. I pay all suppliers [myself] now where I used to trust someone else to do that function.'*

Lastly, this respondent highlights how important it can be for businesses to develop a capacity to anticipate and prepare for future contingencies:

- *'Being able to identify potential risks in advance - in the type of work we carry out it is extremely important to identify risk - Risk and Method statements are carried out and all Health and Safety*

equipment is maintained to a high standard. Our IT system is maintained on a weekly basis and equipment is replaced on a regular basis.'

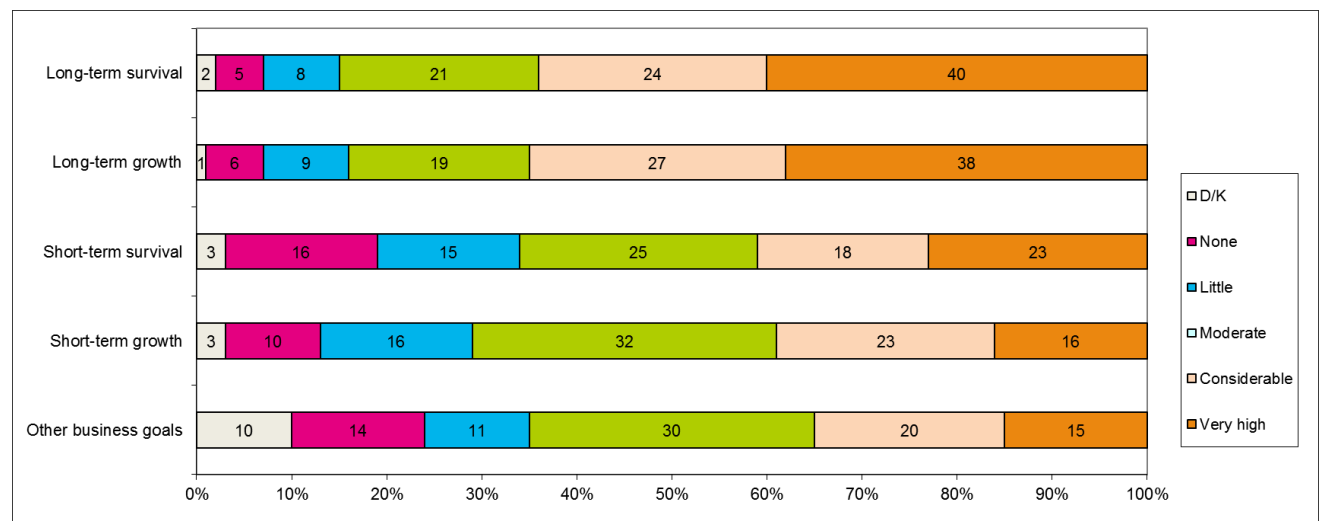
Strategic priorities, growth and resilience

Finally, we examined the relationship between the ways that SME owners allocate their time between different priorities, their growth ambitions. Firstly, we asked respondents to estimate the proportion of their managerial time and/or resources that is currently devoted to each of the following business goals (where: 5= 'a very high proportion' and 1= 'none'):

- Short-term survival
- Long-term survival
- Short-term growth
- Long-term growth
- Other business goals (i.e. goals not related to business survival or growth)

These results suggest that businesses do tend to adopt a fairly long-term perspective (Chart 5), a finding that has been highlighted in research on smaller family firms in particular (e.g. Lumpkin, Brigham and Moss (2010)).

Chart 5: 'What proportion of your managerial time and/or resources is currently devoted to each of the following business goals?' (where: 5= a very high proportion and 1= none)?



Almost two thirds of the respondents (64%) reported spending either a 'very high' or a 'considerable' proportion of their managerial time on and resources on issues related to long-term survival. Similar figures were reported for long-term growth. The equivalent proportions were lower for short-term survival (41%) and short-term growth (39%). However, when the figures are broken down by size of firms, it is clear that the owners and managers of smaller firms tend to devote more time to short-term issues as compared to their counterparts in relatively larger firms (Table 3)

Table 3: Proportion of your managerial time and/or resources devoted to the goal 'short term survival' (where: 5 is 'a very high proportion' and 1 is 'none') – by turnover band

	1 – none	2	3	4	5 – a very high proportion
Less than £100,000	11.2%	10.8%	26.0%	20.8%	27.2%
£100,000- £249,999	12.0%	13.3%	27.1%	18.7%	27.7%
£250,000- 499,999	13.1%	16.7%	21.4%	22.6%	24.4%
£500,000- £999,999	20.8%	15.1%	28.6%	15.1%	18.2%
£1m-£5m	15.5%	17.5%	24.7%	15.7%	22.7%
£5m+	23.2%	16.8%	21.6%	20.0%	15.7%
All	15.8%	15.2%	25.0%	18.4%	22.8%

CONCLUDING DISCUSSION

This working paper has looked at how SME owners and managers prepare for external shocks of various kinds. We also asked about their experiences of these often unexpected and disturbing events, and examined both their positive and negative impacts on the business. We pointed out at the outset that like much of the research in this area, the responses are those of the 'survivors'; they do not include the voices of owners and managers whose businesses have failed in recent years (or indeed those who decided to close their business for other reasons, such as retirement). With this in mind, it is clear that external events can often pose a serious challenge to small and medium-sized firms. For nearly three quarters of respondents, the last five years had seen at least one external event that posed a 'real threat' to their business. While the credit crunch and related market uncertainties were the most commonly identified sources, it was also striking to find that extreme weather events, ranging from heavy snowfall to storms, flooding and heat waves, had posed a real threat to more than a quarter of businesses over the last five years. This raises interesting questions around the impact of extreme weather on SME owner and manager perceptions of environmental issues, most notably climate change (e.g. Williams and Schaefer 2013; Williams 2014), and about the broader challenge of making SMEs more sustainable (Vickers, Vaze, Corr, Kasparova and Lyon 2009; Underwood, Blundel, Lyon and Schaefer 2012). With regard to resilience, it was notable that while a higher proportion of respondents thought that their business was stronger rather than weaker as a consequence of exposure to external events, there were strong size-related differences. As in other areas of our research, smaller firms tended to fare worse than their larger counterparts. Businesses had made a variety of changes in order to become more resilient, the most popular being diversification into new market(s) and/or business activities, adjusting supply chain relationships and reducing staffing.

Respondents' views on the most important factors in becoming more resilient echoed much of the recent research in this area⁴. The study identified a number of recommendations for practitioners including:

⁴ Additional discussion material and supporting references on resilience, sustainability and SME owner and manager perceptions of environmental issues will be incorporated as this working paper is developed.

having people with the skills, initiative and authority to respond rapidly to unfolding events; maintaining relatively low fixed costs and/or very little debt; and the somewhat optimistic aim of being able to identify potential risks in advance. Changes of this kind seem advisable if smaller firms are to build their longer-term resilience alongside the more familiar strategic priorities. However, the findings also suggest that policy intervention may be needed to bolster organisational (and by implication, community-level) resilience in the future. While it is possible to identify a variety of government interventions in this area (e.g. Parker, Redmond and Simpson 2009; Blundel, Monaghan and Thomas 2012), the evidence presented here suggests that there needs to be a more systematic coupling of SME resilience and sustainability support policies in future. The problem is particularly acute for smaller firms, which often lack the resources to respond to external shocks. Given the forecast increase in the frequency and severity of extreme weather events, linking environmental performance and resilience may be a good place to start.

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